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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/589,857	08/17/2006	Johann Bonn	294566US0PCT	3534

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EXAMINER

JOHNSON, KEVIN M

ART UNIT	PAPER NUMBER
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1793

NOTIFICATION DATE	DELIVERY MODE
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11/17/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/589,857	Applicant(s) BONN ET AL.	
	Examiner KEVIN M. JOHNSON	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 10-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 13-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status

1. New claims 13-17 are added. Claims 10-12 are withdrawn. Claims 1-9 and 13-17 are pending and presented for examination.

Election/Restrictions

2. This application contains claims 10-12 drawn to an invention nonelected with traverse in the reply filed on 5/13/2009. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

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the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Downey (US 2627477) in view of Lenney et al. (US 5470903).

In regard to claims 1 and 2, Downey teaches an aqueous emulsion of a reactive size, useful for the sizing of paper (column 1, lines 14-20). Downey fails to teach the use of a cationic polymer comprising vinylamine units as a protective colloid in the emulsion.

Lenney teaches that poly(N-vinylformamide) may be used as a protective colloid for the formation of aqueous polymer emulsions (abstract). No diketenes are taught be present in the protective colloids.

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the poly(N-vinylformamide) taught by Lenney as the emulsifying agent in the aqueous sizing emulsion taught by Downey. This modification would be motivated by the teaching in Downey that any emulsifying agent may be used (column 1, lines 20-24), and the teaching in Lenney that the poly(N-vinylformamide) protective colloid is especially useful for producing monomer dispersions (column 2, lines 21-24).

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In regard to claims 3 and 4, Downey teaches that cationic starches are not required (example 3). The protective colloid material taught by Lenney does not include a cationic starch.

In regard to claim 5, the poly(N-vinylformamide) utilized in Lenney is a homopolymer of N-vinylformamide (column 2, lines 45-50). The formamide group may be hydrolyzed to the amine (column 3, lines 13-14).

In regard to claim 6, Lenney teaches that the poly(N-vinylformamide) has a weight average molecular weight of 20,000-325,000 (column 2, lines 50-54).

In regard to claim 7, Lenney teaches that the total amount of the emulsifying agent is from 0.5-20 % based on the total monomers to be emulsified (column 3, lines 38-44).

In regard to claim 8, the reactive size utilized by Downey is a dimer of a higher alkyl ketene having a carbon chain length of 6-20 carbon atoms (claim 2).

In regard to claim 9, Downey teaches that the ketene dimer is contained in amounts of 0.1-2.0%, and may be produced in a more concentrated form (column 3, lines 54-70).

7. Claims 13-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Downey in view of Lenney as applied to claim 1 above, and further in view of Champ et al. (DE 10237911 A1, for the purposes of examination the English language equivalent US 2006/0162883 is cited).

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In regard to claim 13, Downey and Lenney fail to expressly teach a hydrolyzed poly-N-vinylformamide polymer with a K value of 75-110 and a degree of hydrolysis of 65-95 mol% of the vinylamine units.

Champ discloses a polymer containing vinylamine units for use as a promoter in paper treatment compositions containing alkyldiketenes. The polymer may be a hydrolyzed polyvinylformamide with a degree of hydrolysis of 95% and a K value of 90 (paragraph 62).

It would have been obvious to one of ordinary skill in the art to utilize the material disclosed by Champ in the composition suggested by Downey and Lenney. Such a modification would have been motivated by the teaching in Lenney that polyvinylformamide may be used to form protective colloids and in Champ that the material is beneficially employed in paper treatment compositions.

In regard to claim 14, Champ discloses that paper treatment compositions comprising alkyldiketenes preferably contain stearyldiketenes (paragraph 62).

In regard to claim 15, Champ discloses that paper treatment aqueous dispersions containing a reactive size preferably have a pH of 3-4 (paragraph 31).

In regard to claim 16, Downey discloses that the composition includes a starch.

Champ teaches that aqueous dispersions for the treatment of paper may include a cationic starch (paragraph 32). Calcium carbonate may be included as a base for the purposes of neutralization (paragraph 24). A specific embodiment is disclosed that contains calcium carbonate and a cationic cornstarch (paragraph 63).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include cationic cornstarch and calcium carbonate in the composition disclosed by Downey. Such a modification would have been motivated by the teaching in Downey that starch may be included and the disclosure in Champ that paper treatment dispersions beneficially include calcium carbonate and cornstarch.

In regard to claim 17, Downey teaches that the ketene dimer is contained in amounts of 0.1-2.0%, and may be produced in a more concentrated form (column 3, lines 54-70). Champ discloses an embodiment that contains 12% of stearyl diketene (paragraphs 59-62).

Double Patenting

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422

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F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claims 1, 2, 5 and 7 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 4 and 5 of copending Application No. 11/720362. Although the conflicting claims are not identical, they are not patentably distinct from each other because the vinylamine polymer utilized as a protective colloid in the conflicting claims does not contain diketenes.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Arguments

10. Applicant's arguments filed 7/29/2009 have been fully considered but they are not persuasive.

In response to applicant's argument that the use of a vinylamine containing polymer that is free of diketenes as a protective colloid provides unexpected results, the

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fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). In the instant case, the use of a diketene free vinylamine containing protective colloid is obvious over the disclosure of Downey and Lenney. The composition produced as a result of the teachings of the prior art would necessarily possess the improved properties.

The argument that Lenney does not provide motivation for the use of a poly(N-vinylformamide) protective colloid in the dispersion disclosed by Downey is not persuasive. The protective colloid disclosed by Lenney is useful for stabilizing monomer dispersions, and the composition disclosed by Downey is a dispersion of ketene dimers. One of ordinary skill in the art would reasonably expect that a protective colloid useful as a stabilizer in monomer dispersions would also be effective in dimer dispersions such as those disclosed by Downey. Further, Downey discloses that the emulsifying agent must be hydrophilic and that reactions between the diketene and the hydroxyl groups of the thickening agent. The protective colloid disclosed by Lenney is hydrophilic (column 2, line 33) and hydroxyl groups are not required as part of the protective colloid (claim 3). Therefore, the protective colloid disclosed by Lenney is especially suited for use in the dispersion disclosed by Downey because it meets or exceeds the requirements for the selection of an emulsifying agent laid out by Downey. The intended use of the dispersions disclosed by Lenney is not relevant to the teaching

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of the ability of the poly(N-vinylformamide) to act as a stabilizer; the teachings regarding the properties of the protective colloid are independent of the intended use.

11. No arguments have been directed to propriety of the obviousness type double patenting rejection.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEVIN M. JOHNSON whose telephone number is (571)270-3584. The examiner can normally be reached on Monday-Friday 7:30 AM to 5:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on 571-272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kevin M Johnson/
Examiner, Art Unit 1793

/David M Brunsman/
Primary Examiner, Art Unit 1793